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THE West American Scientist.

MARCH, 1888.

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THE WEST AMERICAN SCIENTIST.

VOL. 4. MARCH, 1888. No. 35

GEORGE W. TRYON, Jr.

On Sunday afternoon, February 5, 1888, George W. Tryon, Jr., died at his home in Philadelphia. Coming so soon after the death of Isaac Lea, this sad event has quickly deprived that city of the second of its noted conchologists. Mr. Lea, however, lived to a good old age, and his life work seemed complete and well rounded out; but Mr. Tryon died in the prime of life, with his last and greatest work but half finished. He was not quite fifty years of age, having been born May 20, 1838, but his life was one of great activity, and his published works are important and varied.

His whole life was spent in the neighborhood of his birthplace, and his early education was obtained at Friends' school. Entering into business with his father, who was a gun-smith, he continued to devote spare time to his studies, and became greatly interested in natural history. The study of shells at length so fascinated him, that in 1867 he withdrew from business and concentrated his energies on his chosen science, in which he soon became eminent. His earlier writings were chiefly published in the '*American Journal of Conchology*,' which he established in 1865, and of which seven volumns were published.

After writing various extensive works on American Mollusca, in 1883, he published his "Structural and Systematic Conchology," which, large as it is, was designed to be but an introduction to the great work of his life, namely, the "Manual of Conchology, Structural and Systematic." The first volume of this series was issued in 1879, and up to the time of his death, twelve volumes had appeared. It was estimated that about thirty volumes would be required to fulfill the purpose of the author, which was nothing less than to describe and figure every known species of mollusk which now exists anywhere in the whole world. Four lithographic artists were constantly preparing plates, while Mr. Tryon most industriously studied the shells and wrote the descriptions.

His basis for comparison and study was the extensive collection and library of the Academy of Natural Science, to both of

which he had contributed very largely, both in labor and material.

It may here be remarked, that though men may die, their works live, and the Academy has already taken steps to have the Manual continued.

Mr. Tryon's illness was of brief duration. About a week before his death he was seized with an attack of what was believed to be asthma, and from which he was recovering, when a sudden failure of the heart showed itself, and soon he was free, 'Leaving this outgrown shell by life's unresting sea.'

Josiah Keep.

THE VIOLETS OF BRITISH COLUMBIA.

Viola biflora, Linn., very rare near Stuart Lake, B. C.

Viola blanda, Willd., sweet white violet, found here and there in the province.

Viola canadensis, Linn., Canada violet. In the forests of B. C.

Viola canina, Linn., var. Sylvestris Regel., Dog violet, in the swamps near the ocean.

Var. longipes Nutt., through the Rocky Mountains to Donald in the Columbia valley, Cedar Hill near the city of Victoria, B. C.

Var. rupestris, Regel., in the Rocky mountains.

Viola cucullata, Art. Common Blue violet. In wet meadows of the province.

Viola glabella, Nutt., Western yellow violet. In the valley of the Fraser, at Port Moody and near Mount Finlayson near Victoria, B. C.

Viola nuttallii, Pursh var. lingaelfolia Nutt. around Victoria.

Var. proemorsa, Watson, near Victoria.

Viola adorato, Linn., English sweet violet, escaped from gardens near Victoria.

Viola palustris, Linn., marsh violet. Vancouver Island and Peace River.

Viola renifolia, Gray, Kidney-leaved violet. In swamps and wet meadows of B. C.

Viola sarmentosa, Dougl. In the valley of the Fraser and near the city of Victoria.

Viola selkirkii, Pursh, Great spurred violet. In Selkirk mountains.

M. Lopatecki.

THE NEW CHINESE WEEPING LILAC.

Some years ago, seeds of a species of lilac, new to cultivation, were sent from China by a botanist traveling there, and produced plants of a habit of growth midway between the common lilac and the ligustrums. They were all somewhat fastigiate but one, and that one is the subject of our story.

It grew with much the form of Forsythia Suspensa, and trailed

upon the ground. By grafting this upon selected stems of common lilac, is easily produced the beautiful little tree which the accompanying electrotyped photograph shows. Its habit is wholly pendulous, and its branches are long and very slender, and curiously set with pairs of opposite leaves, which stand out

THE NEW CHINESE WEEPING LILAC.

horizontally like pairs of wings, thus giving the plants a light and airy style, which is very attractive. The size of the tree is about the same as the well known Kilmarnock willow, which is the most useful size for gardens and small lawns.

Since the first appearance of the 'Cut Leaf Weeping Birch' no new weeping tree has had such a decided sensation among

both nurserymen and amateurs as this Weeping Lilac. Its exceeding gracefulness of form; its curiously arranged leaves, in pairs and set like a bird's wings in flight; its white blossoms, which deck it with honey-scented clusters of flowers, such as no other weeping tree can boast; these things make it the most unique of all this highly decorative and popular class of trees.

The lilac is beloved by everybody. It is associated with our earliest remembrances of blossoms, and it has a hold upon the imagination and the affection of all, as strong and as tender as its fragrance is distinct. The first shrub that our ancestors brought from England and planted by their new thresholds was the purple lilac.

Newer trees and shrubs were added, but none of them could fill that fragrant corner in the heart held by the old 'common lilac.' It is surely this deep feeling that has at once appropriated the 'Weeping Lilac' and given it such a welcome.

This interesting tree received a first-class certificate of merit from the Massachusetts Horticultural Society, and is introduced and for sale only by the "Shady Hill Nurseries," Cambridge, Mass.

[They issue a large illustrated catalogue with colored plates of this and other novelties, free to all. Send them your address.—EDITOR.]

SCIENTIFIC MISCELLANY.

M. Lopatecki reports two curious insects from the west waste of Central America. One of them is Ageronia feronia, a remarkable species, being only one butterfly or moth with the exception of the European-death-bed-hawk-moth, which is capable to bring forth sound at will. The insect is whitish gray, with dark brown curves and lines, and sits head downward, with expanded wings, against a branch of a tree of its own hue. When approached it will rapidly fly off, producing on the wing several sharp and very quick sounds.

The other insect is of the family Anoea, and with closed wings resembles exactly the color of the leaves of its food plant to such perfection that even at a very short distance it is scarcely possible to recognize it. The first of those insects M. Lopatecki observed near San Juan del Sur, in Nicaragua; the second one in San Lorenzo, in the Republic of Honduras, though the natives assert that those insects are to be found all over Central America on the Pacific and on the Atlantic coasts.

The most numerous family is, without question, the insect world. President Sharp, of the London Entomological Society, states that, while Linnæus knew only 3,000 species of insects 120 years ago, the collections of the world probably include at present 200,000 or 250,000 species. Certain data lead to the inference that we do not yet possess more than one-tenth of those existing,

so that even the present rapid rate of discovery will not complete our collection of insects in less than 1,000 years. Before the end of that period many species of to-day will have become extinct, and Dr. Sharp urges that those likely soon to disappear should be especially sought.

An interesting problem to astronomer and philosopher is the remarkable ring of minor planets traveling in orbits between those of Mars and Jupiter Over 270 of those little objects have been discovered, and Prof. Daniel Kirkwood now gives the encouraging assurance that the number unknown is practically unlimited. He shows that Jupiter is probably tending to reduce the number by increasing the eccentricities of their orbits until their perihelion distances fall within the sun itself. He believes that several of our periodical comets may have been asteroids, drawn from their orbits in this way.

Two telegraph wires, each about six miles long, are to be laid in Spain expressly for studying earth currents and atmospheric electricity. The lines will cross each other at the astronomical observatory of San Fernardo, one running due east and west, and the other due north and south.

The channel of the Congo can be traced for a hundred miles out to sea as a remarkable submarine valley, having a depth of 1,432 feet just at the river's mouth.

A curious speculation has been made concerning what would happen were the earth's rotation to cease. The equatorial diameter being twenty-six miles more than the polar diameter, the earth would present an equatorial zone of solid ground miles high above sea level, the water being drawn to the poles. This land zone would then be like our artic regions, and would be banded by a ring of permanent ice and snow.

COLIAS EURYTHEME, BOISDUVAL.

Ever since the summer of 1877, when my eyes were gladdened by the profusion of Colias edusa in Kent and Sussex, England, the genus Colias has had a kind of fascination for me. But it was not until last year when I made the acquaintance of Colias eurytheme, C. Meadii and C. Alexandra in this country, that I fully understood the extreme interest attaching to the various forms of Colias, and most of all to the polymorphic C. Eurytheme. This species may be considered to belong to the central region of North America, though it exists to the Pacific, and occasionally occurs as far east as Massachusetts, as well as in Ontario and Quebec. It is double-brooded, and so different is the spring from the summer race that it was formerly considered a distinct species, Colias Keewaydin. There are also two other distinct forms, called ariadne and eriphyle, and the last was like Keewaydin, supposed

a good species, until Mr. W. H. Edwards proved otherwise by breeding eurytheme from eggs laid by C. eriphyle. The earliest spring form in Texas and California is ariadne, a smallish butterfly, about an inch and a half across the wings, pale sulphury with orange patches on the fore wings, and the dark marginal borders are ill-developed. A little later in the same localities, or as the only winter form further north, comes Keewaydin, much like Ariadne, but slightly larger, duller in general color, with the orange patches more suffused over the wings, the under side also is decidedly more ochreous, that of Ariadne having a tendency to greenish, with rosy fringes Then the summer form Eurytheme type is much larger, over two inches in expanse, and vivid orange, the sulphur yellow only appearing on the costa, the inner margin of the secondaries, and the yellow spots in the marginal band of the female. The under side is more like Keewaydin than Ariadne. In this locality (Swift Creek, Custer Co., Colo.) another very different form, which I will call intermedia, is found flying in the summer. It is larger than Keewaydin, the expanse of wings in the female being over two inches (about fifty-five millimeters), the color of the wings is pale sulphur, with distinct orange patches on the primaries, much as in Ariadne, but the wings are much suffused with black scales near their bases; the marginal borders are fairly well-developed. The under side is pale greenish yellow, not ochreous, as in eurytheme type and Keewaydin, nor have the secondaries the greyish appearance of Ariadne. The fringes are only slightly rosy. So much for the orange forms of eurytheme; there is yet another, of a delicate sulphur tinge, almost like C. philodice, and this is called eriphyle, Colias hagenii being also a synonym. This form eriphyle flies with the orange varieties, and is itself seasonally dimorphic, as pointed out by Mr. W. H. Edwards ('Canad. Ent. 1887, p. 173). On November 9, 1887, I caught a female specimen of the autumn brood of eriphyle in this locality. This may be called autumnalis, and has much the same relation to typical eriphyle as Ariadne has to typical eurytheme (vide W. H. Edwards, loc. cit.), being smaller, with narrower borders, and the hind wings more greyish-green. Whitish females occur of eurytheme, Keewaydin and intermedia, resembling analogous forms in other species of the genus, these may be called pallida. The forms, then, of C. Eurytheme may be classified as follows:

Colias eurytheme Bdv. a. orange forms.

I. Spring or winter forms.
  1. Ariadne Edw.
  2. Keewaydin Edw.
    a ♀ pallida.

II. Summer forms.
  3. Typica=Eurytheme Bdv.
    a ♀ pallida.

4. Intermedia Ckll.
   a ♀ pallida.

C. Yellow forms.
   5. Eriphyle Edw. (type.)
   6. Autumnalis Ckll.

In conclusion, I may say that I shall be greatly indebted to anyone who will send me specimens of this species from any locality, with date of capture and other particulars appended, for the further study of its variation. *T. D. A. Cockerell.*

WEST CLIFF, CUSTER CO., COLORADO, March 9, 1888.

CANADIAN FILICINEÆ.

In the 'Transactions of the Royal Society of Canada,' 1884, Messrs. John Macoun, M. A.; F. L. S.; and Dr. T. J. W. Burgess, M. B., gave an interesting exposition of the ferns of Canada. In an introduction which evidences thorough knowledge of this class of plants of the Dominion, and a love of the beautiful in nature, the authors give a succinct history of the Pteridology of the country, and tabulate the then known Canadian species and varieties, according to the classification of Mr. Redfield, as follows :

First—Cosmopolitan.
Second—Boreal.
Third—Appalachian.
Fourth—Pacific.
Fifth—New Mexican.

Omitting the sixth class,—Tropical,—and adding a class showing such of the Canadian species as are peculiar to North America.

Of the sixty-four species and varieties tabulated, as known to grow in the Dominion, we find four that are 'Cosmopolitan,' or widely distributed over the globe, in temperate and tropical regions; twenty-three in the second class, which inhabit the northern regions of the globe; twenty-six in the third class, extending though the hilly regions of the United State east of the Mississippi, northward into Canada; some of them also in the Old World; ten in the fourth class, extending along the Pacific Coast, from California to Alaska; one species (Cheilanthes lanuginosa, Nutt.) is included in the fifth class; twenty species are peculiar to North America.

In a 'Synopsis of Canadian Ferns and Filecoid Plants,' by George Lawson, published in 1864, the number of ferns, including Ophio-glossaceæ recorded, was fifty.

In the work under consideration, there are sixty-four species, and nine distinct varieties, which are distributed in five botanical areas, namely:

First—Atlantic provinces and Eastern Quebec.

Second—Ontario and Western Quebec.

Third—The Great Plains, north to the Arctic Circle.

Fourth—Rocky Mountains.

Fifth—British Columbia.

The species and varieties found in the different areas are, in the first, fifty-four; in the second, fifty-five; in the third, thirty-one; in the fourth, twenty-seven, and in the fifth, thirty-one.

The general remarks and explanation of the development of ferns are very interesting. Then follows a 'Synopsis of Genera' from 'Eaton's Ferns of North America,' so far as the same is applicable to Canadian species.

The description of species are comprehensive, and the references to other publications quite extensive, while the book is filled with interesting remarks on the species and varieties, and notes of localities where found, with the names of the collectors, and altogether is one of the finest additions to fern literature which has come under our observation.

Ferns are generally considered as having no commercial value, but these authors, in connection with the description of Pteris aquilina (the common brake or braken), one of the most universally distributed of all ferns say, 'that, no other fern possesses so much economic value as Pteris aquilina, the young fronds and root-stalks have been used as food by the inhabitants of different countries, and the dried fronds, chopped up with hay or straw, are, in Wales, given as fodder to horses; the ashes, which contain a large amount of alkali, have been used by glass-makers, and in Switzerland the potash is extracted for commercial purposes; the plant has been employed for thaching, also for fuel, and as packing material for fruits; while in medicine the root is, by some, considered extremely valuable as a vermifuge.'

In a supplementary article, published in the transactions of the same society, in 1886, Dr. Burgess gives some important recent additions to the list of the recorded Canadian species and varieties.

Adiantum pedatum, L. variety rangiferinum Burgess, so-called from the resemblance of the pinnules to the horns of the reindeer, discovered near Victoria, British Columbia.

Aspidium aculeatum Swz. variety lobatum, Kze.; British Columbia.

Aspidium oreopteris, Swz. British Columbia.

Two varieties of Botrychium ternatum, var., from Rupert River, N. E. Terr. var. Anstrale, from Vancouver's Island, B. C.

Onoclea sensibilis, L. variety obtusilobata, Tarr. from New Brunswick.

Polypodium vulgare, L. variety Cambricum, Willd. (the P. Cambricum L.) British Columbia.

Scolopendrium vulgare Sm. var. marginatum, Moore, variety ramosum, Gray; and var. multifidum, Gray. The last are from New Brunswick. *Lorenzo G. Yates.*

SANTA BARBARA, CAL., February, 1888.

A DOG AND HIS PLAYMATE.

Where I am boarding, at Camp Sargent, California, lives a great, buffy-brown, curly-haired dog, and the funniest thing about him is the way he carries on with his little playmate, a half-grown kitten almost the same color as himself.

The big fellow is so large that his honest and good-natured attempts at play are often hardly appreciated by Miss Pussy. He will pick her up and carry her all about the yard with the cat's head fairly inside his great mouth. But when the playful fellow drops her on the ground again she is never injured and never attempts to retaliate for the atrocious liberties he takes.

Then he pretends he is going to eat her up altogether and throws his immense paws around her neck, in a very dangerously loving manner for the cat, I have thought.

But as pussy rather likes his rough play after all no one interferes, even when strangers declare that the irrepressible dog is 'a'murdering the cat.' Doggie and his lady-love are seen together almost all the time and take their meals from the same plate. At night times and on rainy days, the kitty is almost always found cuddled up fast asleep in Rodger's fluffy curls, so it must be a case of true-love between them sure enough.

Harry R. Taylor

ALAMEDA, CAL.

EDITORIAL.

A few words of explanation we deem due our readers. Our January number was not issued till into February, the February number until late in April; in consequence our March and April numbers are delayed and will be necessarily issued almost simultaneously. This delay is mainly due to the mechanical department, changes in the office of our printer and the press of work at his office during the first of the year. We hope for greater promptness in the future.

Another word. The editor has had for some months not only the entire editorial work connected with several papers and magazines, three monthlies and one weekly, but also the greater part of the business management. He is now relieved of the latter work and can give more attention to other duties. The financial support of the *West American Scientist* is not so great at present as it should be and we trust its friends will endeaver to correct this evil by increasing its subscripton list and the advertising patronage, now sufficiently large to allow of our publishing a magazine twice as large as we are now able to do, if prompt payments and renewals were the rule.

We regret to chronicle the death of our friend and correspondent, George W. Tryon, Jr., the eminent American conchologist

and author of many works on that subject. Prof. Keep contributes a brief sketch of his life in this number.

We are indepted to our talented friend, Maurice Lopatecki, for several interesting articles on the natural history of British Columbia, and also to Dr. L. G. Yates and T. D. A. Cockerell, for valuable contributions.

We are far behind in giving literary notices, but will soon be able to make due acknowledgements and reviews of those deserving.

CLOSE OF THE CENTURY'S 35th VOLUME.

The April number of THE CENTURY closes the thirty-fifth half-yearly volume. The first article is by Edward L. Wilson, the well-known photographer, and is descriptive of the natural and other features of Palestine 'From Dan to Beersheba.' The article has a great number of illustrations, mainly from photographs, and will be of special interest to the teachers and students of the International Sunday-School Lessons.

Theodore Roosevelt, in this number describes, with the aid of Mr. Remington's well-informed pencil, that decidedly American institution, 'The round-up ' As Mr. Roosevelt and Mr. Remington have both participated in scenes such as are here depicted, the paper is unusually vivid both in letter-press and illustrations.

An illustrated article on 'The American Inventors of the Telegraph' tells the inside story of the invention, especially bringing out the services rendered to the enterprise by Alfred Vail. Mr. Vail's extremely important connections with the invention is here for the first time fully and authoritatively told. The article will be a surprise to the larger part of the public.

Two articles of special literary interest are Henry James's paper on Robert Louis Stevenson, with a sketch of Stevenson's very individual face by Alexander, and a brief essay by the Rev. T. T. Munger on 'The Works of Elisha Mulford.' Mr. James does not speak of 'Underwoods' in his essay, it having appeared since the paper was written; but there is a poetic criticism of it in 'Bric-a Brac,' by Miss Thomas.

Dr. Eggleston's story of 'The Graysons' has some very exciting chapters, and James Lane Allen's story, illustrated by Kemble is a pathetic account of 'Two Kentucky Gentlemen of the Old School.'

ST. NICHOLAS FOR APRIL, 1888.

The April ST. NICHOLAS has a seasonable frontispiece by Fenn, two toddlers under an umbrella, on 'An April Day.' This introduces the opening article 'What Makes it Rain?' by George P. Merrill. There is also a charming 'Rhyme for a Rainy Day' by Julia M. Colton, artistically framed by Katherine Pyle.

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70	Common Tern	3	04
80	Black Skimmer	4	08
120c	Farallone Cormorant	3	50
122	Brandt's Cormorant	3 4	25
123b	Baird's Cormorant	3	25
199	Louisiana Heron	3 4	08
201	Green Heron	4	05
221	American Coot	5 6 7	05
316	Mourning Dove	2	02
378	Burrowing Owl	5 to 10	15
385	Road Runner	4	15
413	Red Shafted Flicker	5 6	05
444	Kingbird	3 4	03
448	Cassin's Kingbird	3 4 5	20
495	Cowbird	1	03
498	Red-winged Blackbird	4	02
508	Bullock's Oriole	4 5	08
510	Brewer's Blackbird	4 5	04
519a	Crimson House Finch	4 5	04
581	Song Sparrow	4 5 6	02
591b	California Towhee	4	05
593	Cardinal Grosbeak	3	04
622a	White-rumped Shrike	4 5	04
703	Mockingbird	4	04
704	Catbird	4	02
713	Cactus Wren	4 5	08
721a	Parkman's Wren	5 7 8	04

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	Price.
Alligator Teeth	05
Buffalo Teeth	10
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Sycamore Tree Balls	3 for 05
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Chinese Chopsticks	per pair 08
" Game Cards	2 for 05
" Slow Matches	05
" Game Stones	2 for 05
Chinese Coins (very old)	each 05
Chilacothe Bean Pods (large and curious)	25
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Cal. Live Oak Tree Acorns	3 for 05
" " " " Balls	05 to 10
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Dried Olives	3 for 05
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Horse Shoe Crabs	05 to 10
Hawk Moth Cocoons	10
Horned Toads (stuffed)	50
Indian Bread Moss	per package 05
Indian Arrow Heads (imperfect)	05
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Liver Beans	05 to 10
Money Cowry Shells	2 for 05
Pampas Grass Plumes, 15c. each, 2 for 25c., 5 for 50c., 12 for	1 00
Porcupine Quills	per doz. 05
Petrified Wood (very fine)	05 to 1 00
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Skates Eggs	05
Sharks Eggs	15
Sea Urchins, (Pacific)	5 to 10

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Fisswella Volcano	03
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Dufrenite	05 to 1 00
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Idocrase	05 to 1 00
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1803 Head to Right	25
1817 Head to Left, 13 Stars	10
1818 " " "	08
1819 " " "	10
1820 Uncirculated	40
1821 Head to Left	30
1822 " " "	30
1825 " " "	20
1827 " " "	15
1828 " " "	20
1831 " " "	10
1832 " " "	10
1833 " " "	10
1834 " " "	05
1835 Head 1834	10
1837 Plain, Hair String	10
1838	08
1840	08
1852 Head to Left	05
1868 Bronze, Indian Head	08
1880 " " "	05

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